

## ECS/EMD Configuration Change Request

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Page(s)

1. Originator Robert Cole	2. Log Date: <b>02/24/04</b>	3. CCR #: <b>04-0123</b>	4. Rev: —	5. Tel: 301.925.0799	6. Rm #: 3109F	7. Org. COTS/HW
8. CCR Title: Install "fx fixer" startup script in PVC						
9. Originator Signature/Date <b>Robert Cole /s/ 02/18/04</b>			10. Class <b>II</b>	11. Type: <b>CCR</b>	12. Need Date: 2/28/04	
13. CCR Sponsor Signature/Date <b>Pamela Johnson /s/ 02/18/04</b>			14. Category of Change: <b>Update ECS/EMD Baseline Doc</b>		15. Priority: (If "Emergency" fill in Block 27). Routine	
16. Documentation/Drawings Impacted (Review and submit checklist): N/A			17. Schedule Impact:		18. CI(s) Affected: SANHW	
19. Release Affected by this Change:		20. Date due to Customer:		21. Estimated Cost: <b>None - Under 100K</b>		
22. Source Reference: <input checked="" type="checkbox"/> NCR (attach) <input type="checkbox"/> Action Item <input type="checkbox"/> Tech Ref. <input type="checkbox"/> GSFC <input type="checkbox"/> Other: ECSed38249						
23. Problem: (use additional Sheets if necessary) See next sheet.						
24. Proposed Solution: (use additional sheets if necessary) Install the attached "fx fixer" .sh script in /etc/init.d on the PVC Irix Sanergy-attached hosts (p0drg01, p0drg04, p0acg05). See next sheet for script code and instructions. Although the failure has not been observed in the PVC, the script should be tested in the PVC to verify that it has no unintended side effects. The script was functionally verified on the prototype host a0acg02 where the failure can be observed. This workaround is to be tested and offered to the DAACs until a vendor fix can be obtained. LaRC has also agreed to test script.						
25. Alternate Solution: (use additional sheets if necessary) none						
26. Consequences if Change(s) are not approved: (use additional sheets if necessary) It will not be possible to functionally verify Sanergy's ability to fuse on a host in which this script is installed.						
27. Justification for Emergency (If Block 15 is "Emergency"):						
28. Site(s) Affected: <input type="checkbox"/> EDF <input checked="" type="checkbox"/> PVC <input type="checkbox"/> VATC <input type="checkbox"/> EDC <input type="checkbox"/> GSFC <input checked="" type="checkbox"/> LaRC <input type="checkbox"/> NSIDC <input type="checkbox"/> SMC <input type="checkbox"/> AK <input type="checkbox"/> JPL <input type="checkbox"/> EOC <input type="checkbox"/> IDG Test Cell <input type="checkbox"/> Other						
29. Board Comments:			30. Work Assigned To:		31. CCR Closed Date:	
32. SCDV CCB Chair (Sign/Date): <b>Byron V. Peters /s/ 02/26/04</b>			Disposition: <b>Approved</b> App/Com. Disapproved Withdraw Fwd/ESDIS ERB Fwd/ECS			
33. EDF CCB Chair (Sign/Date):			Disposition: Approved App/Com. Disapproved Withdraw Fwd/ESDIS ERB Fwd/ECS			
34. ECS CCB Chair (Sign/Date):			Disposition: Approved App/Com. Disapproved Withdraw Fwd/ESDIS ERB Fwd/ESDIS			

## ADDITIONAL SHEET

**CCR #:** 04-0123    **Rev:** — **Originator:**

**Telephone:**                      **Office:**

**Title of Change:**

**Problem:**

Due to a bug in either Irix or Qlogic drivers, in some cases fabric devices are unreadable upon bootup under 6.5.17m. This failure can be observed by executing "dd if=<dev> of=/dev/null count=1" and observing that 0+0 records out is returned by dd in some cases. Although it is not yet known exactly what causes the failure (not all 6.5.17m machines exhibit the problem nor do all devices on a given controller path on an affected host), a workaround has been identified. By executing the command "fx -d <dev>" and exiting without saving changes, the failed devices become readable. Until this action is performed, applications which rely on fabric I/O (such as sanergy) can fail due to the inability to read from the fabric devices.

The above workaround is very time-consuming for administrators to perform due to the large number of fabric devices on some systems. Also, there is potential for unintended corruption of the fabric devices to occur during the workaround due to human error. This is because the default behavior of the fx command is to write out changes and a typing error on the part of the user implementing the workaround can allow changes to be written. Consequently, an automated approach to performing the "fx fix" is needed.

**Instructions:**

1. Copy the "fx\_fixer" script to /etc/init.d on p0drg01, p0drg04, and p0acg05.
2. Create a symbolic link from /etc/rc2.d/S99fx\_fixer to /etc/init.d/fx\_fixer
3. Reboot the host
4. Verify that Sanergy fuses normally.

**Script code:**

```
#!/bin/sh
#
# fx_fixer - calls 'fx' on fabric devices to force creation of block devs
#
# This is necessary due to a bug in Irix 6.5.17m (and possibly other versions)
# where fabric devices are not readable upon bootup with certain Qlogic cards
# (the problem is known to occur with QL2200A and QL2310).
#
# The failure can be observed by running the dd command against the device to
# read a single block. If dd returns 0+0 records out, the device is in the
# failed state. Executing fx -d <device> and immediately exiting without writing
# changes will restore the device to a state in which it is readable.
#
for dev in /hw/rdisk/*/*vol/* # get list of fabric devices
do
    ret=`dd if=$dev of=/dev/null count=1 2>&1 | awk '$0 ~ /records out/ {print $1}'` # dd test
    if test $ret = 0\+0 # look for failure indication
    then # run the fx command to fix the device
        (fx -d $dev 1> /dev/null <<EOF
        exit
        no
        EOF
        )
        # verify the fix and log results to syslog
        ret2=`dd if=$dev of=/dev/null count=1 2>&1 | awk '$0 ~ /records out/ {print $1}'`
        if test $ret2 = 0\+0
        then
            logger fx_fixer: unable to fix $dev
        else
            logger fx_fixer: fixed $dev
        fi
    fi
done
```

